shown in operation and in relation to a portion of an absorbent garment manufacturing line;

Figure 4 is a partially cut away view of a feed tray according to a preferred embodiment of the present invention, shown at one end of its range of movement and showing the other end of its range of movement in dashed lines;

Figure 5A is a cut away view of a portion of a feed tray according to a preferred embodiment of the present invention;

Figure 5B is a cut away view of a portion of another feed tray according to a preferred embodiment of the present invention;

Figure 6 is a partially cut away side view of a feed tray, motor and side plates according to a preferred embodiment of the present invention;

A1

Figure 7 is an isometric view of the outlet portion of a feed tray according to a preferred embodiment of the present invention;

Figure 8 is an isometric view of a combining drum according to a preferred embodiment of the present invention;

Figure 9 is a sectional view of the vacuum surface of a combining drum according to a preferred embodiment of the present invention, shown operating with the core composite adjacent the vacuum surface;

Figure 10 is a partially exploded isometric view of another combining drum according to a preferred embodiment of the present invention;

Figure 11 is an isometric view of yet another combining drum according to a preferred embodiment of the present invention;

Figure 12 is a cross sectional view of a combining drum assembly according to a preferred embodiment of the present invention as viewed from a direction orthogonal to the rotating axis of the combining drum, and as seen from reference line BB of Figure 13;

Figure 13 is a cross sectional view of the combining drum assembly of Figure 12, as seen from reference line AA;

Figure 14 is a partially cut away view of the combining drum assembly of Figure 12, shown with the outer drum partially removed; and

a1

Figure 15 is an isometric view of the outlet portion of a feed tray according to another embodiment of the present invention. --

Please replace the paragraph at page 40, line 16 to page 41, line 2 with the following paragraph:

a2

-- In other embodiments it may be desirable to vary the flow rate of the SAP 326 in particular areas to provide zoned absorbency. Referring now to Figure 15, the pan 404 may be contoured or shaped to provide concentrated flows of SAP during operation or to otherwise control the flow of the SAP. For example, in one embodiment the pan 404 may have one or more depressions 1502 along the outlet edge 406 that effectively increase the downward angle α at the depressions 1502. In such an embodiment, the SAP 326 may tend to funnel into the depressions 1502, and those portions of the opened tow 312 that pass beneath the depressions 1502 should receive a relatively high concentration of SAP 326. In another embodiment, the pan 404 may have troughs 1504 that extend below the adjustable gate 408, effectively increasing the height h of the adjustable gate 408 at those points to increase the flow rate of SAP through the troughs 1504. Such troughs 1504 may extend to the outlet edge 406 to additionally act as depressions 1502, as described above. Other variations in the outlet edge 406 and pan 404 geometry will be apparent to those skilled in the art based on the teachings provided herein. --

Please replace the paragraph at page 51, lines 9 to 24 with the following paragraph:

a3

-- Referring now to Figure 8, it has been found that a "combining drum"-type vacuum draw roll 800 may be advantageously used in conjunction with vibratory feeders 332, such as those described herein, or, alternatively, with other SAP feed devices and methods, such as those that are known in the art. The combining drum 800 is characterized in that several or all of the parts that eventually form the absorbent core 6 of the garment 10 are assembled in a

continuous motion around all or part of the combining drum's circumference. In a preferred embodiment, the combining drum 800 combines the first casing sheet supply 316, opened tow 312, SAP 326 and second casing sheet supply 318 (*i.e.*, various constituent parts of the core composite 348, which may, of course, include other parts) in a substantially continuous operation as they are conveyed by the combining drum 800. Each of the parts may be conveyed to the combining drum 800 separately and then joined together into an integrated structure, or alternatively, some of the parts may be joined to one another prior to contact with the combining drum 800. For example, an additional layer 20 may be affixed to either side of one or both of the first and second casing sheet supplies 316, 318 before the supply is provided to the combining drum 800. --

a3

Please replace the paragraph at page 52, line 21 to page 53, line 6 with the following paragraph:

-- Referring now to Figure 9, there is shown a sectional view of the vacuum surface 804 region of a combining drum 800 as is appears just after combining the first casing sheet supply 316, opened tow 312, SAP 326 and second casing sheet supply 318 into an integrated core composite 348. The width W_1 of the vacuum surface 804 (as measured in a direction parallel to the rotational axis of the combining drum 800) preferably corresponds approximately to the width of the opened tow 312 and to the width of the portion of the feed tray 334 from which SAP 326 is provided. The first and second casing sheet supplies 316, 318 are preferably wider than the opened tow 312, and their excess width is located in side areas 902 that overlie the landing areas 808. The first and second casing sheet supplies 316, 318 preferably are joined to one another in their side areas 902 by adhesive bonding, other methods described elsewhere herein or by other methods known in the art. As noted elsewhere, a lay on roll 330 may be used to help join the first and second casing sheet supplies 316, 318 by use of pressure, crimping nodules, and the like. --

a4

Please replace the paragraph at page 55, lines 9 to 22 with the following paragraph:

A5

-- Referring now to Figure 10, regions of high SAP concentration, and thus greater absorbency, may be provided in the MD and CD by making the vacuum surface 804 with particularly designed target regions 1002 that convey a greater amount of vacuum to portions of the opened tow 312. Such target regions 1002 may have larger holes and/or a greater concentration of holes in those areas where a greater concentration of SAP 326 is desired. The larger amount of open space provided in such regions will allow a greater amount of airflow into the vacuum, and thus cause a greater amount of SAP to migrate to those areas. For example, in the embodiment of Figure 10, the region 1004 has a greater concentration of larger holes, which should provide a SAP concentration in the portion of the core composite 384 adjacent region 1004. The particular pattern of SAP concentration may be adjusted by making each of the target regions 1002 from a removable plate 1006 having the desired hole pattern. Substitute plates 1006 may be easily machined to provide different hole patterns and zoned absorbency patterns. --

Please replace the paragraph at page 55, lines 23 to 25 with the following paragraph:

A6

-- In another embodiment, shown in Figure 11, the vacuum surface 804 may be separated into discrete target regions 1102, which may have varying widths, to provide zones of high and low MD and CD SAP concentrations. --

Please replace the paragraph at page 56, lines 5 to 21 with the following paragraph:

a 7

-- It should be understood that by providing a distance between corresponding parts of each target region 1002, 1102 that is approximately equal to a core length X_1, the circumference of the combining drum 800 will be sized to equal a whole number multiple of the core length X_1. At a minimum, the circumference can equal one core length X_1, but in such an embodiment, the various parts of the core composite 348 will be in contact with the vacuum for relatively little time, which may lead to inadequate SAP distribution or other forming problems. Smaller

diameter drums may also be subject to greater vibration. These problems may become exacerbated when the vacuum drum 800 is used with higher speed assembly lines. Problems may also be exist with larger drum diameters. For example, the manufacturing tolerances for a larger diameter drum may be less precise. In addition, as the size of the drum increases the amount of startup waste may increase, particularly if a greater amount of vacuum is required for the larger drum, leading to longer vacuum stabilization times. Larger drums that require greater amount of vacuum also may require more power to produce the necessary vacuum. It will be understood that these considerations also apply to embodiments of the invention in which the combining drum 800 does not have target regions 1002, 1102, such as in the embodiment depicted in Figure 8. --

A9

Please replace the paragraph at page 57, lines 10 to 24 with the following paragraph:

A8

-- Referring now to Figures 12 through 14, a preferred embodiment of the combining drum is shown in which the combining drum 800 may be configured to apply a vacuum to the parts of the core composite 348 only through a portion of the drum's rotation. The combining drum 800 of a preferred embodiment comprises an outer drum 1202 that is positioned to rotate about a fixed inner drum 1204 by, for example, being affixed to an axle 1208 that passes through rotary bearings 1210 in the inner drum 1204. Such bearings 1210 may be equipped to reduce or prevent the leakage of the vacuum through them. A vacuum is applied to the space 1206 inside the inner drum by a vacuum port 810. The vacuum is conveyed to the outer drum's vacuum surface 804 by way of one or more passages 1212 through the inner drum 1204 that are preferably located subadjacent the path of the vacuum surface 804 of the outer drum 1202 to maximize the strength of the vacuum applied through the vacuum surface 804. It will be understood by those skilled in the art that the inner drum 1204 may be replaced by any vacuum chamber having one or more passages 1212 that convey a vacuum to a location subadjacent all or part of the vacuum surface 804. --

Please replace the paragraph at page 57, line 25 to page 58, line 11 with the following paragraph:

-- Only those portions of the vacuum surface 804 that are immediately adjacent the passages 1212 receive a vacuum, so the duration and location of the vacuum's application may be modified by changing the size, number, or location of the passages 1212. Referring specifically to Figure 13, the passages 1212 may be positioned through an arc of the inner drum 1204 that defines a vacuum zone Θv. The leading edge of the vacuum zone 1302 is preferably located proximal to the point at which the first casing sheet supply 316 contacts the combining drum, which is designated as Location A in Figure 3. The trailing edge of the vacuum zone 1304 is preferably located beyond (as the drum rotates) the point at which the second casing sheet supply 318 contacts the combining drum 800, which is designated as Location D in Figure 3. Referring now to Figure 14, it can be seen that those portions of the vacuum surface 804 that are not adjacent the passages 1212 are effectively cut off from the pull of the vacuum. After the core composite 348 passes the trailing edge of the vacuum zone 1304 and reaches this blocked-off area it is released from the vacuum's hold and conveyed to other parts of the assembly line.

a9

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Please replace the paragraph at page 58 lines 16 to 28 with the following paragraph:

a10

-- Various devices may be employed with the combining drum 800 to modulate the location and amount of vacuum applied to the core composite 348. In one embodiment, shown in Figure 13, internal sleeves 1306 or other valving mechanisms may be used to adjust the points at which the vacuum zone Θv begins and ends. In another embodiment, shown in Figure 12, other internal sleeves 1214 or other valving mechanisms may be used to narrow or widen the width of the vacuum zone Θv, thereby effectively narrowing and widening the width W_1 of the vacuum surface 804. In still another embodiment, an internal sleeve or other valving mechanism may be used to reduce the vacuum level within all or part of the inner drum 1204. Any of such sleeves and valving mechanisms may be actuated by a control system 320 under the guidance of an open- or closed-loop feedback system. Greater or lesser amounts of vacuum